

American International University-Bangladesh (AIUB)  
**Department of Computer Science  
Faculty of Science &Technology (FST)  
Fall 20\_21**

**Course NAME: SOFTWARE ENGINEERING**

**Section: J  
Group No: 01**

**Course Teacher:** **MOHAMMAD MAHMUDUL HASAN**

**PROJECT TITLE**

**MODERN HOUSING MANAGEMENT SYSTEM**

A software Engineering project submitted By

|  |  |  |
| --- | --- | --- |
| SN | Student Name | Student ID |
| **21** | **MD. NAIMUL HOSSAIN** | **19-39513-1** |
| **22** | **CHOWDHURY, ANKETA** | **19-39514-1** |
| **25** | **NUR-A-MARZAN DIPRO** | **19-39529-1** |
| **30** | **SAHA, ARNAB** | **19-39836-1** |

The project will be Evaluated for the following Course Outcomes

|  |  |
| --- | --- |
| CO3: Choose appropriate software engineering model in a software development   environment | Total Marks |
|  |
| Project Background Analysis (needs, goal, benefits, etc.) [5Marks] |  |
| Appropriate Process Model Selection and Argumentation with Evidence [5Marks] |  |
| Completeness, Spelling, Grammar and Organization of the Answer [5Marks] |  |
|  | |
| CO4: Explain the roles and their responsibilities in the software project   management activities | Total Marks |
|  |
| Content Knowledge (e.g. System Functionalities, Related Product/Services) [5Marks] |  |
| Project Role identification and Responsibilities descriptions [5Marks] |  |
| Presentation Delivery and Defense [5Marks] |  |

# PROBLEM DOMAIN

## Background to the Problem

* **Write the background description that helps putting the project into the right context of a problem domain and gives everyone involved a common view of the project**

Modern Housing Management System is a system which will establish connection between Moderns and tenants so that person who seek for accommodation will be able to rent apartments, houses or buy apartments, houses or even plots from the software-based system. The system will basically focus on the problem that people face when they try to procure an accommodation of the above-mentioned factors.

* **What is the root cause of this problem? why is this problem is so important to consider?**

The root cause of this problem is our country being very small owing to the small land we have, planned housing has been a major issue. We can’t find affordable living space easily, we have to look for them a lot in order to get it, or sometimes we get really bad deals for the purchase or rentable home we are looking, or there can be a situation when the people who is from other cities is looking for proper accommodation and fast. Maybe a lot of students who come to the cities to study from their home town also may find it difficult to find a proper and affordable homing situation. There may be a situation where people are looking for a house to buy and they need it really soon, or people whom want to sell their house or apartment. There might be another situation, where a certain individual won’t have enough money to buy or rent an apartment, so there will be an insufficient balance crisis, which won’t be solved without the help of bank loan or charity. These are some examples of housing problems visible in our country’s current situation.

## Solution to the Problem

* **What are the solutions you are going to propose to deal with the problem? why is this solution is particularly appropriate to solve the problem? Is the solution feasible to the meet the business objective?**

The solve that we propose to deal with this certain problem is a software application which will deal with all the housing, renting, property buying and selling criteria. We are going to build a management system that will help us regarding this problem. The solution is particularly appropriate in our decision because we think our way of solving this matter is efficient and quite solidified. The solution will work like a all in one solution to all the common problems of this field, and it’s quite feasible and completely relevant to the subject matter.

* **Provide a short description of the software being specified and its purpose, including relevant benefits, objectives, and goals**

The software we are going to design is to nullify the over exhausting process of rent seeking labor or effort and make it easier for the consumers or buyers to find out their desired rental or buying habitation location. The benefits and outcome of this software is quite easy to understand. It is going to be an existential platform which will help both sellers and buyers the upper hand as they will be able to showcase their selling or suffice their buying needs in the same place. The main objective is to make the effort of house renting or buying or selling to be as easy as possible. And the goal is to make sure people find their desired habitable place with ease and within the bounds of their home.

* **Existing studies presented in the problem area. What are the existing software solutions are available to solve the aforementioned problem?**

We may be in the digital age where online listings help homebuyers find a great property or house at a great price through a listing database, but that isn’t the only way technology is changing the real estate game. From rent and vacancy tracking to contract and insurance management, real estate management software solutions help you maintain and organize payments, tenants, and even craft your own property website.

Some existing online or software based company like:

* Appfolio Property Manager.
* Buildium.
* Property Operations Workspeed’s.
* Rentec Direct software.
* Cozy.
* Online Rental Property Manager (ORPM).
* RentTracker.
* TenantCloud.

Mainly all of this are cloud-based property management system is good for the real estate agent on the go who wants to monitor properties anywhere, at any time also helps users create their own websites to host rental listings. In addition to an owner portal where you can manage everything and view reports, the software also allows you to create professional websites for your properties.

We propose to deal with this certain problem is a software application which will deal with all the housing, renting, property buying and selling criteria. We are going to build a management system that will help us regarding this problem. The solution is particularly appropriate in our decision because we think our way of solving this matter is efficient and quite solidified.

# SOFTWARE DEVELOPMENT LIFE CYCLE

## Process Model

* **Provide an analysis regarding the nature and environment of the software that you are going to develop and select the best suitable method(s) to develop the software.**

Our software is going to be needed a lot of upgrading works and feedback from clients as it is meant to be made for them. So, in order to cope up with the demands of the clients and the consumers and also the technical workers workflow, we are going to use an iterative methodology used in our software. There are many models available, as ours might be using the agile method. But based on the time constraints that might be looked on this software of ours, we have decided to use XP programming. As our software won’t need too much of documentation and also it won’t need any complex design, XP method will work just fine here. Also, the whole process is visible and accountable, developers and the technical workers can easily demonstrate their progress. Constant feedback is going to be vital in our project, which is easily obtained by this method. Regular testing and scrutinizing will help our software give the employee satisfaction also the clients and the clientele fulfill their demands.

* **Present your arguments based on your analysis about why your selected method(s) is the best choice among all other methods to develop your proposed software.**

We are selecting Extreme Programming (XP) which is an agile software development framework that aims to produce higher quality software and higher quality of life for the development team. Extreme Programming (XP) is considered to be the best method among all the methods to us. This method has some advantages that any other method can’t give us.

* The main advantage of Extreme Programming is that this methodology allows software development companies to save costs and time required for project realization. Time savings are available because of the fact that XP focuses on the timely delivery of final products. Extreme Programming teams save lots of money because they don’t use too much documentation. They usually solve problems through discussions inside of the team.
* Simplicity is one more advantage of Extreme Programming projects. The developers who prefer to use this methodology create extremely simple code that can be improved at any moment.
* The whole process in XP is visible and accountable. Developers commit what they will accomplish and show progress.
* Constant feedback is also the strong side. It is necessary to listen and make any changes needed in time.
* XP assists to create software faster thanks to the regular testing at the development stage.
* Extreme Programming contributes increasing employee satisfaction and retention.

## Project Roll Identification and Responsibilities

* **Identify all the roles in the project management activities in software development.**

The role in the project management activities in software development for Extreme Programming (XP) method is given bellow:

* Customer
* Programmer
* Tester
* Tracker
* Coach
* Consultant
* Manager
* **Describes the responsibilities of the role in the software development.**

When working with others on a project of any kind and size, it’s only natural to break that project into tasks to make that big project more manageable, with different team members handling those specific tasks. Naturally, it’s optimal that team members should communicate with each other on individual progress in some way, as one person’s role and responsibilities affect the others. It’s not very different from XP. In fact, this model of teamwork is part of how XP works best, keeping XP values of customer satisfaction as the focal point of each software version release. In an ideal situation, the roles of an XP team help keep everything running as smoothly as possible.

## [Customer](https://explainagile.com/agile/xp-extreme-programming/roles/customer/)

This particular role may or may not be filled by an “end-user,” but their function here is key. A Customer will be the one to write User Stories, decide on questions of the stories, and will likely have job titles such as “Analyst,” “Planner,” or perhaps even “Designer.”

## [Programmer / Developer](https://explainagile.com/agile/xp-extreme-programming/roles/developer/)

There will, of course, be more than one programmer on a team, but those who fill this role are the ones to listen to the user stories, define tasks based on the stories and give an estimate on how long tasks will take, along with performing Unit Tests on their code.

## Tester

While Programmers run their own individual tests, a Tester’s role is a bit more general, in that they run functional tests, chart the results and note when test results start declining.

## [Tracker](https://explainagile.com/agile/xp-extreme-programming/roles/tracker/)

This person is usually assigned to talk to each programmer once or twice per week, ask how that person is progressing and listens to the answer. If progress seems to be slowing, the tracker may suggest some sort of action, from a CRC meeting, talking to the Customer, or perhaps talking to another programmer or even the team Coach.

## [Coach](https://explainagile.com/agile/xp-extreme-programming/roles/coach/)

This person’s function is often manifold, because of the different “sub-roles” a Coach has to take on. They are often considered the “Chief Architect” of a project because their job is not only to see a grand vision for a project, but to also possibly mentor less experienced team members and decide a methodology for a project, among other activities.

* **Consultant**

Consultant is an external member possessing the specific technical knowledge needed.

## Manager

This role falls somewhere in the middle between Coach and Tracker, concerning overall responsibilities. The person filling this role is usually the one to schedule and attend team meetings, assures the agreed-upon meeting process is followed and makes a note of the results of the meeting, which are then handed off to the Tracker.